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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,144	04/19/2005	Jeroen Crouzen	123275	2102
25944	7590	02/03/2006	EXAMINER ZUCKER, PAUL A	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			ART UNIT 1621	
DATE MAILED: 02/03/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/529,144	Applicant(s) CROUZEN ET AL.	
	Examiner Paul A. Zucker	Art Unit 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10 is/are rejected.
- 7) ☒ Claim(s) 9 and 11 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/2/2005</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: a section heading Brief Description of the Several Views of the Drawing(s) is required: See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 2 recites the limitation “ the outlet” on line 7. It is unclear whether this outlet is the first or second outlet. Claim 2 is therefore rendered indefinite.
3. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 2 recites the limitation “ acetic anhydride” on line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3, 4, 6 and 10 rejected under 35 U.S.C. 102(b) as being anticipated by Youggang et al (Lu-Jian Gongye, 2001, 2, pages 23-26). Youggang discloses (Abstract) a continuous process for the synthesis of monochloroacetic acid via the reaction of acetic acid and chlorine in a packed column reactor presumably at atmospheric pressure. Youggang discloses (Page 23, column 1) the effect of acetyl chloride as a catalyst and the mechanism for its *in situ* production. Youggang discloses (Page 25, column 2, first full paragraph) 10%-12% mass ratios of acetic anhydride to acetic acid ratios. Youggang therefore anticipates claims 1, 3, 4, 6 and 10.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1,3-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Youggang et al (Lu-Jian Gongye, 2001, 2, pages 23-26).

Instantly claimed is a process for the preparation of monochloroacetic acid from chlorine and acetic acid in the presence of a catalyst by reactive distillation.

Youggang teaches (Abstract) a continuous process for the synthesis of monochloroacetic acid via the reaction of acetic acid and chlorine in a packed column reactor presumably at atmospheric pressure. Youggang teaches (Page 23, column 1) the effect of acetyl chloride as a catalyst and the mechanism for its *in situ* production. Youggang teaches (Page 25, column 2, first full paragraph) 10%-12% mass ratios of acetic anhydride to acetic acid ratios.

The differences between the process taught by Youggang and that instantly claimed are as follows:

- a. The use of a mass ratio of chlorine to acetic acid of between 0.1 and 2.0 is instantly claimed while Youggang does not discuss this ratio;
- b. The use of internal trays in the reactor column is instantly claimed while Youggang employs Raschig rings; and
- c. A specific liquid residence time is instantly claimed while Youggang is silent about residence times.

One of ordinary skill in the art, however, would, in the course of routine optimization of the process of Youggang, naturally adjust both the mass ratio of chlorine to acetic

acid and liquid residence time using standard practices for the determination of the appropriate values for these variable. With regard to the use of internal trays in the reactor column instead of Raschig rings, Youggang suggests (Page 25, column 2, last paragraph) that the packing material can be varied as well as the residence time. The use of plates as column packing is well known to one of ordinary skill in the art. Thus one of ordinary skill in the art would have been motivated by both routine practice and Youggang' suggestion to make the instantly required modifications. Because of the routine nature of such modifications there would have been a reasonable expectation for success.

Thus the instantly claimed process would have been obvious to one of ordinary skill in the art.

Claim Objections

6. Claims 9 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Allowable Subject Matter

7. Claims 2, 9 and 11 are drawn to allowable subject matter. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art, Youggang et al (Lu-Jian Gongye, 2001, 2, pages 23-26), neither discloses nor fairly suggests the instantly employed reactor column or the use of diluent gas. The

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instantly claimed process is therefore patentable over the teaching of Youggang, the closest prior art.

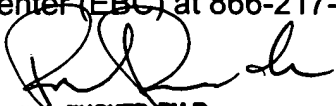
Conclusion

8. Claims 1-11 are pending. Claims 1-8 and 10 are rejected. Claims 9 and 11 are objected to.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Zucker whose telephone number is 571-272-0650. The examiner can normally be reached on Monday-Friday 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


PAULA ZUCKER, PH.D.
PRIMARY EXAMINER
